B

WD2239.B490.

App.F.IX-4]

1929.

File No. 433-19

Previous References.
Dmy 433-19-1-14
to 15-25

(Dmy Gen)

Serial Nos. 26-39.

Later references.
126-26-1-8
Gen. Dept. Dte 208 of 30-31

GENERAL & REVENUE SECRETARIAT

Serial Nos. 14

Part B for Dmy 1926

SUBJECT

Preservation of the images of the temples at Belur and Halebid

G.O. Dte 1517-18 dated 28.5.1926 to the Dmy. Comr Comptr

Sanctions the recommendation of the Dmy Comr. & calls for final report of action taken in the matter

F. R. S. 11] 1920.

GENERAL AND REVENUE SECRETARIAT.

(Mar)

NOTES.

File No. 433-20

FILE HEADING.

Preservation of Carved Images of the temples at Belur and Halebedu.

From

Dr. R. Shama Sastry, Ba., Ph. D.

No. 5-1/21 Dated 5/11 8 1920 Received 12-8 20

Diary No. 634	Enclos	Spare Copies	Serial No. 26

BRIEF ABSTRACT OF LETTER.

Requests to furnish a Copy of the Results of the experiments Conducted by the Industrial Chemist in the matter of deterioration of the Stones of the Belur temple

	NOTES AND ORDERS.
27.	No 895 dt 9.8.20 to the Director of Archaeological Researches. Informs that the information will be Communicated to him upon its receipt

NOTES—First Sheet.

S. R., S. III-2.

General and Revenue Secretariat.

1287

Mus File No. 433 of 1923.

Serial No.	
28	No 1772 Dt 23.4.23 to Asst Dir. of Hte. Requests him to intimate the results of last experiments Conducted.
29.	No. 656 Dt 28/1 - 4/12 - 23 from Asst Dir. Concern. States that it is not possible to provide any money for last purpose from the Current Year's grant as it has already been allocated having a surplus of Rs 830/- wh. may be required for meeting unforseen expe. during the Current Offl. Year. Out of Rs 500 sanctioned for the purchase of Camera Mirror 98.14.- has been spent & the rest has lapsed & Head
30	No. Dc 1129/22-23 Dt 7.12.23 from Asst Dir. of Hte. Forwards the Copy of Report of Mr. S.G. Sastry Re Preservation of Carved Images. The further report may be awaited from Mr Dt. 7.12.23.

Dt 10/4/23

Asst Director

Dt 14/4/23

NOTE—Contn. sheet.

P.T.O.

G. R. S. III-2

General and Revenue Secretariat.

Mun File No. L 13 of 1919

Serial No.	
5884-588 20.1.23	3. Gen. Report after further trial is awaited. Rec'd 28.1.23
	From the Director of Industries & Commerce No. 147/4 dated 12/17.2.23. — Forwards copy of his letter to the Aizawl Commr stating that the investigations made by the Industrial Chemist show that the best protective coating is formed by the application of Gutta-percha Resin and that if necessary action is taken in the matter by the Aizawl Dept the Industrial Chemist will be requested to furnish an estimate of cost and to supervise the operations.
	4. Submitted for perusal. Perhaps the Aizawl Commr's communication on the subject may be awaited.
	5. A Copy of Mr A.G. Sarkar's report 21.2.23. has been sent to the Mun Comr but none has been rec'd. Yet a copy may be called for and sent to the Dr of Arch. researches who wants it regarding the preservation of Cave drawings.
	6. The further report of the Mun Comr may be awaited.

NOTE—Contn. sheet.

G. R. S. III-2]

General and Revenue Secretariat.

Mug. File No. 433 of 1924

Serial No.	
	7. Report not? RL 24.2.23 Work a sample of dry 10 lbs of the clay is sent from W. C. Ry 24/2/23
1111 26/2	9. May the Report asked by Secl vacuo? As the Munr. has not sent up the Report RL 1/3/23 to. 4/3/23
32	From the Mug: comr., Letter no. C 1189 of 22-23 & 27-2-23 1-3

Forwards copy of letter, with its enclosure, from the Director of Industries and Commerce reporting on the results of investigations conducted by the Industrial Chemist regarding the preservation of images in the temples at Belur and Halebid; and states that the opinion of the Dy: Comr. has been called for on the several remedial measures suggested by the Industrial Chemist, as also a full report on the acts of vandalism & waste in the temple at Belur referred to in the report of the

NOTE—Contn. sheet.

G. R. S. III-2]

General and Revenue Secretariat. | Mug File No. 433 of 1919

Serial No.

Industrial-Chemist.

11. As a copy of Mr S. G. Sastri's report has been recd with the Mug: Comr's letter, the approved draft calling for it has been kept back from issue

12 Subd for orders- As the Mug: Comr promises to make a further refce on receipt of 8D 6-3-23 the Dy: Comr's reply, no action appears called for at present-

8D 6-3-23 13 Any further report may be awaited from the Mug Com.

BB 6/3/23

14. Yes

15. For Mineral Products 11/3/23

16 Secn

7383-25 10.3.23

17 Nothing is heard for a months, a reminder may issue. The matter may be kept in view & each case dispersed of.

Recd 13.3.23 11/3/23

Secn pw 1-4-23

18 Subd with a D.O reminder for approval

Subd 9/4

19. Issue BB 11/4/23

NOTE—Contn. sheet.

G. R. S. III-21

General and Revenue Secretariat.

File No. 433 of 1919

Serial No. 33

No. 1189 of 29.5.33 from the Hon. Comm.

For. the Copy of his letter to the Dr. of Industries & Commerce requesting to obtain and send the views of the Industrial Chemist on the alternative treatment of preservation of images in the temples

20. For the [illegible] for the Hindu [illegible] images a [illegible]

Yes

4/6/23

1/6/23

34 From the M.C., letter no. C.1189 of 22-23 of 3-8-23

Forwards copy of letter no. C.1200-22 O.C. of 30-7-23 from D.C. Hassan furnishing his opinion on the remedial measures suggested by the Industrial chemist for the preservation of images in the temples at Belur & Halebid & states that the views of the Industrial chemist on the alternative treatment recommended by the Archaeological chemist in India have not yet been communicated by the Director of Industries & Commerce & that an urgent reminder has been sent.

NOTE—Contn. sheet.

G. R. S. III-2]

Muzrai Secretariat | Muz. File No. 433 of 1923

Serial No.

22 The D. C. states in his letter that the Industrial Chemist opines that cellulose acetate is the only chemical compound that is capable of preventing the further deterioration of the images. If all the images cannot be preserved in the manner suggested, he proposes that the important ones at least may be selected & preserved.

23 As regards the practice of the devotees rubbing their palms to the pillars after the distribution of prasada, he states that the practice of distributing prasada inside the temple has been put a stop to & that strict instructions have been given to the temple servants to keep a cloth for wiping their hands after lamps are trimmed etc and not to rub their hands to the pillars.

24. The M. C. states that on receipt of a reply from the Director of Industries & Commerce the matter would be submitted for orders of Govt. further report in the

The report will be awaited

8/8/23

yes 8/8/23

NOTE—Contn. sheet

WD 0561—GPB—3750—1 8 22

G. R. S. III. 2]

Muzrai Secretariat | Muz. File No. 433 of 1924.

Serial No.

35 From the Muz: Comr. in Mysore.,
letter no. C. 1189 of 22-23 & 13-2-24 -
States that the remedial measures proposed by the Archaeological Chemist of India for the preservation of images in the Halebid & Belur Temples are stated not to differ much from the two methods suggested by the Archaeological office and the Industrial Chemist and that experiments might be conducted as proposed by the latter.

25. The remedial measure suggested by the Industrial Chemist Mr S. G. Sastry is to treat the idols with Cellulose Acetate. He suggested the formation of a Committee consisting of a representative from the Archaeological Deptt and one or two local representatives with the Dy: Comr. to select the images for preservation by the above method - (vide letter no C. 1200-22 & 30-7-23 from D C Hassan to the Muz: Comr. Enclosure to Sl. 34)

26. The suggestions of the Director of

NOTE—Contn. sheet

WD 0561—GPB—3750—1 8 22

Serial No.

Archaeological Researches & the Archaeological Chemist of India are contained in their letters forming enclos: to Sl. no. 33 –

27 As Mr. S G. Sastri, the Industrial Chemist of Mysore, has left for England, it has been suggested by the Director of Industries & Commerce that the experiments may be conducted with the aid of Mr. M G. Srinivasa Rao, Professor of Chemistry or Dr. B. Narasimha Iyengar of the Agrl. Deptt.

28 The estimate of the probable cost for conducting the experiment on a large scale, called for by the M. C. does not appear to have been received. It is a point for orders whether such an estimate should now be called for from either of the two above gentlemen.

29. The source from which the cost of conducting experiments should be met has also to be decided.

SD 21-2-24 22/2/24

NOTE—Contn sheet

WD 0561–GPB– 3750–1 8 22

G. R. S. III. 2]

Muzrai Secretariat | Muz. File No. [illegible] of 192[illegible]

Serial No.

30) Mr Daniel's answer is that since the S.S. Sarkis has gone to England, whether the [illegible] work may be done with the aid of Mr M.S Seeniwasa Rao, Prof of Chemistry or Dr B. Ananthanarayan of the Agricultural Department. The work should be attended to this year and has to be balanced & an either of them, which cannot be done unless the images are selected by a Committee Constituted as proposed by the Industrial Chemist.

25. 2. 24.

Rev. Secy) 31) The matter may be over table. The various relations. There can no estimate of the probable cost - & either estimate it is difficult to pass any order

28.2.24

Recommended

32) I agree.

28 2 24

1.3.24.

33) The J.G. sterling has been received from England.

WD 0561—GPB—3750—1 8 22

NOTE—Contn. sheet

Serial No.

action as suggested by him in para 2 of his letter No. C. 1189 dt 13. 2. 24 may be submitted. The Estimate in question being out of print for orders.

19-3-25

Rev. Secy
1st line

631/263

34) ... Secy Irrigation has recently addressed from England his main impressions during a visit to the Western States of U.S.A. in connection with the investigation of the water supply problem. Since the Irrigation Engineers on the Bombay side of the Indus Commission have also visited the same States and have submitted their report, it would be worthwhile to see what suggestions they have made in this connection.

Secy 3/4

35

4/4/25

36 Issue 1.4.25

NOTE—Contn. Sheet

Serial No.

To the Mary. Commr. no. 1165 d. 7.4.25.
Requests that enquiries may be made whether Mr. G. H. Gadsby who has since returned from England & has been transferred to the Bhadravati Iron Works will be able to attend to the treatment of the image & that if so he may be asked to send up an estimate of the cost of the proposed work through him.
2nd D.O. of 7.4.25 no. 1166 d. 17.4.25. & copy of the above.

36

From the Mng. Commr. in Mysore.,
letter no. 1189 dy 29th June 25 -
7th July
Submits a copy of letter no D.O dy 12.6.25 from Mr S.G. Sastri and that a further report would be made after hearing again from Mr Sadby.

37

37) Mr Sadby states that he would consult Messrs J J Fox & J.W. Harrison & also the Building Research Board & communicate their views -

38) In para 2 of his letter, he states that samples of carving may have to be sent for examination, if required.

Orders for orders 39) [illegible]

NOTE—Contn Sheet

280/11.7

Serial No.

40) The further reply pursuant to the Hon'ble Court may be awaited: and the file submitted again, if it is not received by the End of Sept next

13.9.25

41) Submitted for orders. No reference has yet been received from the Mysore Commissioner

8d
5/10/25

12.10.25.

210/12.10

Hd member)

42) The Hon'ble Court may please advise when the further reply promised by them may be expected to be received by us

13/10

13/10

43)

Tr-11

14.10.25

Serial No. 38

To The Muzrai Commissioner in Mysore
No. C 1189 of 1922-23 & 7-5-1926
forwards Mr S.G. Sastry's report & the proposals for the preservation of the images in the Belur & Halebid temples and solicits sanction to incur an expenditure of about Rs 250/- in connection with Mr Sastry's visit to the place & select proper samples for analysis & the specimen & the experts concerned being met from the interest earnings of the general Muzrai Fund.

4/5) Submd with a draft for orders.
M 15/5
15-5-26 The proposals of the Muz. Commr may be sanctioned.
Draft is put up for approval.
Rev. Secy 17/5

2nd member)

20/5 200/20/5

24/5

25/5

WD 01264—GPB—40,000—17-12-25

General and Revenue Secretariat

MCR File No. 433 of 1929

Serial No. 39.

To. MRA Commr & Comptr
No 1517-B/28. 5.26
Sanctions the Dn C's
Recommendation & calls for
a final report of action taken
in the matter.

NOTE—Contn. Sheet

6312

No. 51/71 433-19-26 Office of the Director of

ARCHAEOLOGICAL RESEARCHES IN MYSORE,

BANGALORE, 8th August 1923.

From

Dr. R. Shama Sastry, B.A., Ph.D.,
Director of Archaeological Researches
in Mysore, B a n g a l o r e.

To

The Muzrai Superintendent
to Government, B a n g a l o r e.

Sir,

I have the honour to request that I may be furnished with a copy of the results of experiments conducted by the Industrial Chemist in the matter of the deterioration of stones of the Belur temple together with the measures recommended by him for arresting the same. This information is required as similar instances of deterioration have come to the notice of this Department.

I have the honour to be,

Sir,

Your most obedient servant,

R Shamasastry
Director of
Archl: Researches in Mysore.

GENERAL & REVENUE SECRETARIAT MURAI

General and Revenue Secretariat. File No. 27/23 of 19

Serial No.	
	Draft to Lyle s. for appl. or order
	ch. 14/8/22.
	89 14/8
	No. Sec. 9 Aug/22
27	To The Director of Archaeological Research
	Inform him that after it is passed
	is received, it will be sent
	15/8/22
	Copy to The Director of Stamps

NOTE—Contn. sheet.

G. R. S. VI—G/32]

SUBJECT.....

.....

.....

Diary No. of letter replied to——

Section

File No.

Serial No

General and Revenue Secretariat

( )

, *the* 191

No. 895

dt 19/8/22

Date of issue——

Signed by——

To

The Director of Archæological Researches in Mysore

Sir,

With reference to your letter No. 57/7 dated 11th Aug. 1922 I am directed to state herein the results of the experiments conducted by the Industrial Chemist in the preservation of the stone images in the Belur and Halebid temples. I have now been communicated to me

Over.

that he required information
with reference to the
[illegible] he received
of the Industrial Chemical is returned

Thanking you,

Yours faithfully,

Manufacturing Co.,

Secretary.

Rec. 15/11/22

Ans.

14/8

89

14/8

896 - 17-27 Co/ to Ind Chemist

Director

List of enclosures.

Copied by

Examined by

G R. S. VI—G/32]

SUBJECT.. .. ...

... .

....:. . . . . .

....

... .

....

*Diary No. of letter replied to*_____

General and Revenue Secretariat

( )

, *the* 191 .

Date of issue 23 11 22

Signed by Mr. T.E.J Mujar

Section

File No.

Serial No 28?

No 1770

ಕಂದಾಯ ಆದೇಶ

[illegible]

I am directed to
request that the
~~upon~~ ~~Communicate~~
the result of the Inquiry
conducted may be kindly
intimated -

[illegible]

SD
20/11/22

List of enclosures.

Copied by

Examined by

23880

C 6 96 of 22-23
Enc me

Office of the Muzrai Commissioner in Mysore,
Dated, Bangalore, the 28th November 1922.

From

K.R. Srinivasiengar Esq., M.A.,
Muzrai Commissioner in Mysore.

REVENUE 1242 MUZR. 22-23

DEC 1922

Mysr 433-19-29

To

T.E. Jayarama Aiyar, Esq., B.A., B.L.,
Secretary to the Government of His Highness
the Maharaja of Mysore, Revenue Department.

Sir,

I have the honor to forward herewith for the orders of Government copy of letter No.C.3.1129/22-23 dated 11th November 1922, received from the Director of Industries and Commerce in Mysore stating that a sum of Rs.98-14-0 was spent out of the sum of Rs.500/- placed at the disposal of that Department for conducting certain experiments for the preservation of the images in the Belur and Halebid temples and requesting that the balance of Rs.400/- may be made available from the current year's State Grant.

2. It is to be regretted that the allotment sanctioned for conducting the experiments last year was allowed to lapse. It is not possible to provide any money for the purpose from the current year's State Grant as it has been already otherwise utilized leaving a small sum of Rs.330/-, which is likely to be required for meeting unavoidable and unforeseen expenditure during the remaining months of the current official year.

I have the honor to be,
Sir,
Your most obedient servant,

Muzrai Commissioner.

D.N.

In G.O. No. 1574-7/Mug.433-19-16 & 20-9-21 a sum of Rs 500 was sanctioned out of the provision in the budget for repairs of Mugrai institutions for conducting certain experiments for the preservation of the figures in the temples at Belur and Halebid.

2. While referring to the above, the Director of Industries and Commerce states in his present letter that only a sum of Rs 98-1-6 was expended last year & the balance lapsed to Govt. He requests that Rs 10400 may be allotted for the purpose & run the current year's grant.

3. The Mug: Comr. states that it is not possible to allot the amount for the purpose, as only Rs 830 has been left out of the reduced provision of Rs 50-00 & that it is likely to be required for very urgent works.

4. In view of the very useful nature of the experiments proposed to be conducted & also of the fact that the amount was allowed to lapse to Govt, may the Mug: Comr be asked to include this in the list of items for which it has been proposed to specially for addl grants.

SD 4-12-22 5/12/22

We may ourselves do so

The M'C need not be written to and 5/12/22

ST 5/12/22

Submitted

The Mug: Comr has included this item in his D.O letter dt 6-12-22 & submitted separately for orders:

SD 6-12-22 6/12/22

Letter No.O.C.1129/22-23 dated 10/11th November 1922, from the Director of Industries and Commerce in Mysore, to the Muzrai Commissioner.

"I have the honor to state that a sum of Rs.500/- was placed at the disposal of this Department in G.O.No.1514-7/Muz.433-19-11 of 20-9-1921 for conducting certain experiments for the preservation of the images in the Belur and Halebid temples and that the grant to this Department was raised by Rs.500/- from out of the Muzrai Budget during the last year.

As against this allotment only a sum of Rs.98/14/- was incurred on experiments last year and that the balance of grant viz. Rs.401-2-0 lapsed at the end of the year.

I therefore request you to be good enough to arrange for the transfer of the balance of Rs.400/- from out of the current year grants of your Department for investigations and experiments to be made this year."

"Copy".

Muzrai Commissioner.

D.N.

Could be asked to include this in the list of items for which it has been proposed to apply for add'l grants.

5/12/72

W. Ling Dunsheath Lord

W J Stirling

ST

This item in his orders -

TELEGRAPHIC ADDRESS INDUSTRIES

In reply please refer to
No. DC 1129/22-3

ENCL. No. One

OFFICE OF THE
DIRECTOR OF INDUSTRIES AND COMMERCE, IN MYSORE.

Bangalore ... 7th December ... 192 2.

FROM

P. G. D'SOUZA, ESQ., B.A., B.L.,

Director of Industries and Commerce in Mysore

Bangalore (India)

To

The Revenue Secretary to the
Government of Mysore,
B a n g a l o r e.

SIR,

With reference to your No: D.O.1772/Muz. 433-19 of the 23rd November 1922, re: the preservation of images in the temples of Belur and Halebid, I have the honour to forward herewith copy of Mr. S. G. Sastry's Report No:Q.Q.1129 of the 20th September 1922 stating that so far the experiments tried for the preservation of carved images have not proved satisfactory. I have asked him to make a close examination and to arrive at some final conclusion and submit a further report.

I have the honour to be,
Sir,
Your most obedient servant,

DIRECTOR.

BV)

Copy of letter dated the 18th September 1922, from the Amildar, Belur Taluk, Belur, to the Industrial Chemist in charge of the Govt: Soap Factory, Bangalore.

====

With reference to your D.O.No:707 dated 15/9/22 re: the protection coatings applied on some of the carvings, I have to inform you that I inspected the images on which the paints were used by you. I find that the paint which had turned whitish even soon after it was used has largely faded and the other paint has remained as it was.

I regret my inability to describe the present condition better owing to my ignorance of chemical effects. I fear that my description might mislead you. May I suggest a personal inspection to find out exactly the result. Begging to be excused for the delay.

=====

No:777 of 20-9-1922. Submitted to the Director of Industries and Commerce in Mysore, Bangalore, for orders:-

The following solution had been tried at Belur.

1)Solution of Cellulose acetate in acetone and ether 3 concentrations of this solutions had been tried, cellulose acetate has the property of forming their elastic transparent films on objects coated with it. For example paying cards are coated with it to protect them from atmosphere moisture and to impart a fine glass on them. The Amildar pleads his inability to accurately describe the effect of the experiments.

2)Duro prene. This was suggested by Dr.Alexander Scott, F.R.S., Consulting Chemist, British Museum, London. The test with this one at Bangalore is not very encouraging, but even from the scanty report of the Amildar,Duroprone seems to have withstood the weather well.

3)A new varnish from America was tried here (at Bangalore).Results are very promising.

4)If ordered, I shall go to Belur (1)to try the new varnish mentioned in para (3) and (ii) to find out the effects of the past experiments.

=====

"Copy."

for DIRECTOR.

BV)

TELEGRAPHIC ADDRESS "INDUSTRIES"

In reply please refer to
No..... .....

ENCL. No.

OFFICE OF THE
DIRECTOR OF INDUSTRIES AND COMMERCE, IN MYSORE
Bangalore 12th. February 193 3

FROM

P. G. D'SOUZA, ESQ, BA, BL,
Director of Industries and Commerce in Mysore
Bangalore (India)

To

The Muzrai Commissioner in Mysore,
Bangalore.

SIR,

I have the honour to forward herewith the report submitted by Mr. S.G. Sastry, Industrial Chemist, in regard to the preservation of images in the temples of Belur and Halebeid. The investigations made by the Industrial Chemist show that the best protective coating is formed by the application of Cellulose Acetate, but as the stuff is -- expensive the images and panels required to be subjected to such -- treatment have to be carefully selected, ~~by the Muzrai Department~~ by the Muzrai Dept. and if necessary, action is taken in this direction. The Industrial --- Chemist will be requested to furnish an estimate of cost and if I --- shall be glad to allow the Industrial Chemist to supervise the operations.

As regards the removal of the lichens by the application of Ammonia, action has to be taken on similar lines. In regard to his -- other suggestions I have no doubt that the matter will receive your consideration as some action in the direction suggested by him is urgently required.

I have the honour to be,
Sir,
Your most obedient servant,
Sd. P.G. D'Souza.
DIRECTOR.

SDN-2)

P. T. O.

No. 147 C. 31325 Dated the

Copy of the above is forwarded wit
Secretary to Government, Revenue Department, for inf
continuation of this office No.CC.1129/22-3 dated the 8th.
1922.

DIRECTOR.

32418

D1706 28
Mucz Branch
3.3.23

C.1189 of 22-23 Office of the Mysore Commissioner in Mysore,
for three
Dated, Bangalore, the 27th January 1923.
1st March

From

K. Chandy, Esquire, M.A.,

Mysore Commissioner in Mysore,

Bangalore.

433-Ey-32

To

T.J. Jeevaraja Aiyar, Esquire, B.A., B.L.,

Secretary to the Government of His Highness

the Maharaja of Mysore, Revenue Department,

Bangalore.

2-MAR

SF
3/8/23

Sir,

In continuation of this office letter C. No.256/22-23 dated 1st December 1922 regarding the preservation of images in the temples at Belur and Halebid, I have the honor to forward herewith for the information of Government, copy of letter No.1200/0 dated 17th February 1923 together with a copy of its enclosure received from the Director of Industries and Commerce reporting on the results of the investigations conducted by the Industrial Chemist and to state that the opinion of the Deputy Commissioner has been called for on the several remedial measures suggested by the Industrial Chemist, as also a full report on the role of Whitelisn and waste in the temple at Belur referred to in the report of the Industrial Chemist. A further reference will be made on receipt of the Deputy Commissioner's report.

2. The Director of Industries and Commerce has also been requested to furnish an estimate of the approximate cost involved in case the suggestions are acted upon.

3. Copies of the Director's letter and enclosure and my letter to the Deputy Commissioner, Hassan District, have been also forwarded to the Director of Archaeological Researche with a request

C. 1189 of 22-23

Office of the Mysore Commissioner in Mysore

Dated, Bangalore, the 27th February 1923.

From

K. Chandy, Esquire, B.A.,

Mysore Commissioner in Mysore,

Bangalore.

To

The Deputy Commissioner,

Hassan District.

Sir,

Adverting to Government Proceedings No.PWD-197-CAT-22-16 dated 20th September 1922, I have the honor to forward herewith copy of letter No.1200/C dated 12th February last together with a copy of the enclosure received from the Director of Instruction and Controller in Mysore regarding the preservation of trees in the temples at Belur and Halebid and to request you to kindly see to it as soon as possible that the necessary measures suggested by the Executive Engineer in his report, are carried out.

2. The observations made in the concluding para "General observations" of the report call for a full and early report from the local officers, especially in the matter of the commission of the acts of vandalism and waste referred to therein ~~to be committed~~ in this famous Shrine situated in the Taluk headquarters itself.

I have the honor to be,

Sir,

Your most obedient servant,

K. CHANDY,
Mysore Commissioner.

D.O.

"Copy

Mysore Commissioner.

26/2/23

Letter No.1269/C. dated 17th February 1933 from the Director of Industries and Commerce in Mysore, to the Muzrai Commissioner:-- 1

"I have the honor to forward herewith the report submitted by Mr. S.C. Sastry, Industrial Chemist, in regard to the preservation of images in the temples of Belur and Halebid. The investigations made by the Industrial Chemist show that the best protective coating is formed by the application of Cellulose Acetate but as the stuff is expensive, the images and panels required to be subjected to such treatment have to be carefully selected and if necessary, action is taken in this direction by the Muzrai Department. The Industrial Chemist will be requested to furnish an estimate of cost and I shal be glad to allow the Industrial Chemist to supervise the operations

As regards the removal of the lichens by the application of Ammonia action has to be taken on similar lines. In regard to his other suggestions, I have no doubt, that the matter will receive your consideration as some action in the direction suggested by him is urgently required".

"Copy".

for Muzrai Commissioner. 20/2/33.

Letter No.1847 dated 8th February 1923, from the Industrial Chemist in charge of Soap Factory, to the Director of Industries & Commerce in Mysore, Bangalore:-

---

BELUR AND HALEBID TEMPLES.

I have the honor to report that I visited the Temple at Belur on the 2nd of this month, with a view to find out how certain protective coatings which had been applied to a few selected images had withstood the action of the weather during the last eight months. This period covered the time of the monsoons and the images selected were the ones which are fully exposed to South-West Monsoon. Three different substances had been experimented with.

Duroprene:- This substance was recommended for experiment by the consulting Chemist to the British Museum, London. The protective coating had practically disappeared leaving one or two dirty brown patches, and even this did not exhibit any promise of a permanent and elastic film. This observation was also confirmed by a duplicate experiment conducted at Bangalore. I am of opinion that Duroprene is of no value whatsoever for this purpose of protecting the carved images at Belur and Halebid, more especially the ones exposed to the outside weather influence.

2. I had tried a special American varnish on one of the images at Balur and also on another at Bangalore. The varnish has stood the action of the weather very well but it has imparted a slightly darker shade to the images which to a small extent spoils the general beautiful effect. Moreover while the varnish is in the process of drying, dirt particles come and settle on the images and after the varnish dries completely, these dirt particles remain embeded in the varnish film. I do not think even this varnish is very satisfactory.

3. Cellulose Acetate:- This substance dissolved in a mixture of Ether and Acetone was tried in three different strengths. The strength chosen was such as to admit of the elastic film formed being seen by the ordinary eye. The films formed by cellulose acetate have stood the action of the weather very well indeed and I think this material will

will be, perhaps, the best one to use for the preservation of the images. When a great number of images are to be treated with this substance, the solution ~~should be applied in very great~~ should be applied in very great dilution (strength of the solution not exceeding, perhaps, .05 per cent) so that the elastic film that has formed may not be detectable with the naked eye. Since the cost of using this material is comparatively high, the only thing to be done seems to be to select the most artistic and the most perfect images which show any signs of deterioration and have them treated with this substance in order to protect them from further decay. If the Government should approve of this idea, then a small Committee consisting of a representative from the Archaeological Department, one or two local representatives with the Deputy Commissioner may select the images that are thus to be protected.

A duplicate set of experiment conducted at Bangalore with Cellulose Acetate has confirmed the observation made at Belur. One of the chief things which has been causing us a great deal of anxiety is the presence of a variety of moss or lichen which is growing as an adherent tissue over these images. Dr. M.A. Sastri, Bangalore was requested to examine this and send up a report to Government for further action. In spite of several personal requests and one or two Demi official reminders, he has not elected to send up his report. In the meanwhile a series of experiments were conducted at London by the Consulting Chemist to the British Museum on a similar problem. Dr. Alexander Scott, F.R.S., was able to discover a very simple and a very effective remedy to get rid of the moss or lichen which is adhering to articles made out of stone. If the article could be soaked in a solution of dilute ammonia for a short time, the moss or lichen gets into a soft and soapy-pulpy condition and by gentle brushing the stone could be cleaned of the moss or lichen. When I was last at Belur I tried to repeat the experiment with 5 and 10 per cent solutions of Amonia and I was able to confirm the observation of Dr. Scott that the moss or lichen does get into a soft and pulpy condition on the application of a solution of Amonia. One difficulty, was however, confronted by me which was absent in Dr.Scott's experiment. He was dealing with the exhibits in the British Museum which

which could be taken out en-masse and immersed in a solution of Ammonia This I could not do at Belur since the images are all fixed in a vertical position, so that any Ammonia that was put on them flowed down continuously and within a short time the Ammonia itself had evaporated away leaving only traces of water on the images. It is not possible to treat every image that has been affected by the moss (even though Ammonia is a very expensive substance) but what can be done is if there are any specially beautiful images which have been affected by the moss to treat them with Ammonia and after thoroughly drying the surface apply a thin coating of Cellulose Acetate, and thus render the images practically immune from the weather influences.

General observations:-- I request you to kindly invite the attention of the Government to a practice which is prevalent in many temples of Southern India, which practice is contributing to the deterioration of the stone carvings inside the temple at Belur. This is a matter, I think, which requires immediate orders of Government. When certain articles prepared out of ghee or oil are distributed within the temple precincts to the devotees gathered there, the usual practice is to wipe off the oil from the hands by rubbing them on the pillars of the temple. Generally oil which is used in 99 per cent of such preparation and also for lighting purposes in the temple contains generally 4 to 5 per cent of free fatty acids and this certainly acts on the soap stone of which the pillars are made. The action of the free fatty acids is slow but sure and accumulative. It ought to be an easy matter to make arrangements to save this practice of using the temple pillars for de-oiling the greasy palm for the devotees stopped. I have brought this aspect of the question to the notice of the Amildar the Sub Division Officer and the Deputy Commissioner concerned.

The practice of vandalism is still a peril. The watchmen are supposed to be present at the temple premises to prevent ruthless acts of vandalism perpetrated by irresponsible visitors and by the mischievous school boys who throng to the temple daily. In fact on more than one occasion I have been informed that the only attractive place around for children at Belur happens to be the temple itself. In order to

to show to the visitors that when struck certain images emit a musical note, the local people strike at the images and this practice should be stopped at all costs. I mentioned this fact in one of my earliest reports and no action seems to have been taken. It was with agony of pain that I observed a beautiful piece of work, which was in-tact about eight months ago, ill treated and mutilated beyond recognition by some body on the spot. It was not a day's work but it must have taken at least six to eight months to commit such a horror. The figure referred to, showed Arjuna in the act of shooting an arrow through the కుక్కుటయంత్ర, and the figure was such a - particularly beautiful one that Dr. Clark when he visited Belur Temple spent nearly half an hour looking at that piece of finest workmanship and taking photographs of the same. The figure is now beyond recognition and it has been attacked at fifteen different places and in every one of those places one sees only a cup like depression of two to three inches diameter. I pointed this out to the Amildar for such action as may be necessary. The Government must do something if they care to preserve these ancient monuments from further acts of vandalism. The attention of the Amildar, Sub Division Officer and the Deputy Commissioner has been invited to this fact also. The destruction caused by the natural elements is enough to cause any amount of anxiety and if to this human agency also should contribute to destroy this beautiful monument, we may as well give up the hope of ever preserving this monument.

I request you to kindly forward this report to Government for their information".

"Copy".

for Huzrai Commissioner. 28/2/23

D.H.

41092

Office of the Muzrai Commissioner in Mysore,

Dated, Bangalore, the 24th May 1923.

From

K. Chandy, Esq., B.A.,

Muzrai Commissioner in Mysore,

Bangalore.

GEN. & REV. SECRET. MYSORE
30 MAY 1923
MUZRAI
D 2188

433-19-33

To

P.G. D'Souza, Esq., M.A., B.L.,

Director of Industries and Commerce

in Mysore, Bangalore.

Sir,

In continuation of this office letter C.No.1189 of 22-23 dated 13th April 1923, I have the honor to forward herewith copy of letter No.357/466 dated 18th May 1923 together with a copy of its enclosure from the Director of Archaeological Researches in Mysore furnishing his opinion on the remedial measures proposed by the Industrial Chemist for the preservation of the images in the Belur and Halebid temples and suggesting an alternative mode of treatment recommended by the Archaeological Chemist in India and to request that the views of the Industrial Chemist on the alternative treatment may be obtained and sent up to me early for obtaining the necessary orders of Government in the matter.

I have the honor to be,

Sir.

Your most obedient servant,

Sd/- K. Chandy,
Muzrai Commissioner.

30 MAY 1923

SAV
30/5/23

D.N. C1189 dtd 22.5.23.

Copy of the above together with a copy of the Director of Archaeological Researches' letter and its enclosure are forwarded, with compliments to the Revenue Secretary to Government.

For Muzrai Commissioner

D.N.

Letter No. 357/466 dated 17/18th May 1923 from the Director of Archeological Researches in Mysore, to the Muzrai Commissioner in Mysore.

With reference to your letter No. C. 1189 of the 22-23 dated the 21st March 1923 forwarding for opinion a copy of letter from the Industrial Chemist regarding the preservation of stones of the monuments at Belur and Halebid, I have the honor to state as follows:-

2. The remedial measures necessary fall under two heads, viz, (i) discolouration of stones and (ii) Decay of stones.

i. Discolouration of stones.

3. The discolouration is caused by the growth of moss or lichen on the monuments especially on the surfaces that are exposed to sun and rain. The Industrial Chemist recommends a wash of Ammonia. This method is no doubt a good one but, as stated by him, is only suitable for small object that can be conveniently immersed in a bath. For bigger objects and for monuments of non-porous stones-the stones of Belur and Halebid have been found to be non-porous- 5-10% warm solution of caustic soda will be very handy. This solution is not volatile is free from any offensive smell or is much cheaper than Ammonia.

ii. Decay of stones.

4. This is a more serious matter and requires careful consideration. The Industrial Chemist recommends a solution of Cellulose Acetate in different strengths and says that the films formed have stood the actions of weather very well. Though Cellulose Acetate is considered a good water-proofing material and can stand the test well for one or two seasons, it is doubtful if a thin film of this substance will remain unchanges after exposure to rain and tropical sun for a number of years. It is feared that hydrolysis may set in in course of time. This will lea behind a porous film of ~~xxxxx~~ cellulose which will then be worse than useless.

5. Any method recommended for the preservation of stone should aim at the hardening of places in rocks which are in course of decay and also at the protection of the surface against the action of water which also carries oxygen and carbonic acid in solution. The Archeological Chemist in India who is an expert in such matters was consulted on this problem and he has suggested the following treatment:-

> The fungoid growths should in the beginning be scraped off and the surface cleaned with a brush. A concentrated solution of magnesia fluate should then be applied to harden the weak places. When the surface has dried up this treatment may be repeated if necessary. The surfaces should finally be made water-proof by coating it with a ~~xx~~ thin solution of hard paraffin-wax (M.P.74° C in light petroleu A little creosote should be added to this solution to prevent fungoid growth.

6. The Archeological Chemist has made a careful examination of the samples of stones and of the soil of the surrounding country which were supplied to him by this Department. A thin ~~solution~~ section of the stone was also got microspically examined by the Director of Geology an a report on its petrological Ch-mist. The latter officer is of opinion that soluble salts, either from the soil of the sea and were not responsible for this decay. He thinks that the process of decomposition consists essentially in hydration, oxidation and a production of carbonates of iron, lime and magnesia and libe ation of hydrated silica. Lim and magnesia are dissolved out by further action of carbonated waters. Ferrous oxide passes over to ferric hydrate by the action of water and oxygen which is indicated by the ochreous discolouration and is accompanied by increase in bulk. Silicates lose silica and alkalies also by the action of water. The stone is free from pyrites. The oxidation of iron and hydration are accompanied by increase in volume producing stra which will increase with the drgree of oxidation and hydration. The los

of the constituents which amounted to about 24.6% in the sample to weaken it. The disintegration is materially helped by the fun growths on account of the penetrating power of the roots and the constituents of their juices.

7. As regards the comparative merits of the two treatments mentioned above the wax-treatment recommended by the Archeological Chemist seems be preferable to that suggested by the Industrial Chemist as the stabili and water-proofing qualities of the paraffin-wax are well known. The co of this treatment is also calculated to be less than that of the cellul process which the Industrial Chemist himself says is comparatively high.

8. An extract from his report showing the results of his examination i detail is forwarded herewith for information.

" C O P Y "

Agriculture Commissioner. 28/5/25

Extract from the report of the Archeological Chemist in India. (13-2-1

The decayed material was digested with warm water and the extract was found free from nitrates and contained mere traces of chlorides and sulphates. It was, therefore, inferred that soluble salts either from the soil or the sea-winds were not responsible for this decay. An examinatio of the sample of soil (sent by you) of this locality also confirmed this view.

Samples of the original (sound) rock, hard (apparently un-decomposed) fragment selected from the decomposed mass and friable (decomposed) fragments from the decomposed mass were carefully analysed and the results are given in the accompanying tables. It is obvious that the second of these samples represents incipient decomposition and the third a very advanced (althou not the final) result of this action. It may also be mentioned here that analysis of the fine dust would not have served any useful purpose as mos of the lighter constituents are carried away by the wind and rain and the composition of what remains will be extremely misleading as regards pure chemical changes that the rock has undergone. On the other hand, the friable lumps retain all the constituents with the exception of those tha have been removed by chemical action of the atmospheric agencies such as carbonic acid, water, oxygen etc.

Table 1 gives the percentage composition of three samples mentioned above. A superficial examination of these figures will give the impression as if no appreciable change has taken place in the course of weathering. In order to find out the loss or gain of the constituents in true relative proportions all these results should be recalculated on a common basis. Without going deep into details of these principles it may be state that of all the constituents of this rock iron is least liable to be lost by solution taking Fe. (iron) as constant the figures in Table 1 have been recalculated and the corresponding results given in Table II. The changes that have taken place in the course of weather are now clear. Column (3)

and (g) the percentage loss or gain of the individual constituents for the entire rock and (h) the percentage loss or gain of the individual constituents in round figures. As anticipated above, there is a decrease in the amount of ferrous oxide (Fec) and corresponding increase in that amount of Ferric oxide (Fe.203) It is note-worthy that magnesia (Mg.O) has been lost much in preference to lime (Ca.O)

Table I.

	a. Original hard rock.	b. Hard fragments in the decayed mass	c. Decayed friable fragments.
Si.O.2	41.66	40.72	39.05
Al.2.O.3	5.00	3.17	1.80
Fe.2.O.3	3.37	3.65	8.05
Fe.O	6.59	6.58	5.18
Mg.O	29.55	30.53	29.03
Ca.O	3.62	2.15	4.54
Na.2.O	0.01	0.39	0.01
K.2.O	2.64	1.91	2.56
H.2.O	5.15	4.62	4.67
C.O.2	2.83	2.62	3.11
S.O.3	⊠	0.82	⊠
Cl.	⊠	0.10	⊠
S.	0.00	0.00	0.00
Ni.O	0.14	⊠	⊠
	100.56	97.26	98.00

⊠ = Not determined.

Table II.

Constituents	d. % composition of the original hard rock (a)	% composition recalculated taking Fe. as constant: e. hard fragments (b)	f. decayed friable fragments (c)	g. % loss or gain for entire rock	h. % loss or gain for each constituents.
Si.O.2	41.66%	39.6%	30.22%	- 11.44%	-27.5%
Al.2.O.3	5.00	3.09	1.39	- 3.61	-72
Fe.2.O.3	3.37)	3.50)	6.23)	+ 2.86)	+84
Fe.O	6.59) Fe.7.47	6.40) Fe.7.47	4.01) Fe.7.47	- 2.58) Fe.0.00	-39
Mg.O	29.55	29.73	22.46	-7.09	-23
Ca.O	3.62	2.09	3.51	-0.11	- 3
Na.2.O	0.02	0.37	0.01)		
K.2.O	2.64	1.86	1.98)	-0.66	-28
H.2.O	5.15	4.50	3.61	-1.54	-30
C.O.2	2.83	2.55	2.41	-0.42	-15
	100.42	93.15	75.83	-24.59	

(- = Loss: Plus = Gain)

Note:- The formulae employed for the recalculations in Columns (e) and (f) is : A x c/B x 100 = X.
Whence A = % of constituents in decomposed rock.
B = % in original rock.
C = % of Fe. in original rock / % of Fe. in decomposed rock.
X = % of saved material, columns (e) and (f)

"Cols"

C 1189 7
ane

5361

Office of the Muzrai Commissioner in Mysore,

Dated, Bangalore, the 3rd August 1923.

6

Mzy 433-19-34

From

K. Chandy, Esquire, B.A.,

Muzrai Commissioner in Mysore,

Bangalore.

D 171

To

T.E. Jayarama Aiyar, Esq., B.A., B.L.,

Secretary to the Government of His Highness

the Maharaja of Mysore, Revenue Department,

Bangalore.

Mzy

6 AUG 1923

Sir

In continuation of this office letter C.No.1189 of 22-23 dated 29th May 1923, I have the honor to forward herewith copy of letter C. No.1200-22 O.C. dated 30th July 1923 from the Deputy Commissioner, Hassan District, furnishing his opinion on the remedial measures suggested by the Industrial Chemist regarding the preservation of images in the temples at Pelur and Halebid and to state that the views of the Industrial Chemist on the alternative treatment recommended by the Archaeological Chemist in India have not yet been communicated by the Director of Industries and Commerce and that an urgent reminder has been sent to-day. On receipt of a reply, a further report in the matter will be submitted for orders of Government.

I have the honor to be,

Sir,

Your most obedient servant,

K Chandy

Muzrai Commissioner.

D.N.

Letter No.C.1200-22 O.C. dated 30th July 1923 from the Deputy Commissioner, Hassan District, to the Muzrai Commissioner in Mysore:-

---

With reference to your letter No.C.1189 dated the 1st March 1923 calling for my opinion on (1) the remedial measures suggested by the Industrial Chemist regarding the preservation of images in the temples at Belur and Halebid and (2) the commission of the acts of vandalism and waste, I have the honor to state as follows:--

The Chemist opines that Cellulose Acetate is the only chemical compound that is capable of preventing the further deterioration of the images. The temples are renowned for their architectural beauty and attract persons from far and wide. It is very necessary to protect the images from further deterioration and if it is considered that the cost of the preservation of all images in the manner suggested by the chemist, is prohibitive, at least only such of the images ~~are~~ as are worth preservation might be selected for the purpose. As suggested by the chemist, a committee consisting of a representative from the Archaeological Department and one or two local representatives with the Deputy Commissioner may be formed to select the images.

As regards the practice of the devotees rubbing their palms, to the pillars after the distribution of prasada, the Amildar reports that the injurious effects of the above practice were duly considered so far back as 1914, that from that time the practice of distributing prasada inside the temple has been put a stop to and that strict instructions have been issued to the servants to keep a cloth for wiping their hands after lamps are trimmed etc., and not to rub their hands to the pillars During my visits to the temple, I have also found that the Prasada is distributed outside the temple and not inside.

With regard to the disfigurement of an idol alluded to by the chemist, the Amildar reports that the damage might have been caused long ago and that the aged people of the place say that the figure was exactly in the same condition ever since they knew it. I also saw the image on the 14th May 1923. The people who were present on the spot represented the same thing to me also. The Amildar has however been instructed to see that the images are not meddled with."

Copy.

D.F.

Muzrai Commissioner 4/8/1

26128

C 1189. 9 urs

986

Office of the Muzrai Commissioner in Mysore

Dated Bangalore, 14th February 1924.

From

K. Chandy, Esquire., B.A.,

Muzrai Commissioner in Mysore,

Bangalore.

To

K. V. Anantaraman, Esquire., B.A.,

Secretary to the Government of

His Highness the Maharaja of Mysore,

Revenue Department.

SC no 35

Sir,

In continuation of this office letter C.No.1189/23-24 dated 8th August 1923, I have the honor to state that the Director of Industries and Commerce in his communicated the views of the Industrial Chemist on the alternative treatment recommended by the archaeological chemist of India in his letter No.457/3 dated 31st October 1923 and the same having been intimated to the Director of archaeological researches, the latter stated that there was not much difference between the two methods suggested by the Industrial chemist and that experiments might be conducted as proposed by the latter.

2. In pursuance of the above the Director was requested to obtain from the Industrial chemist an estimate of the probable cost for conducting the experiment on a large scale and transmit the same for submission to Government.

The Director now surrenders that as Mr.S.C.Sastri left for England on the 30th December 1923, the experiments may be conducted with the aid of Mr. K.G.Sreenivasa Rao, Professor of Chemistry, or Mr. Narasimha Iyengar of the Agricultural Department.

I submit the matter for the orders of Government.

I have the honor to be,

Sir,

Your most obedient servant,

K. Chandy

Muzrai Commissioner.

Section Mewz.
File No. 433-19.
Seria. No. 31.

Diary No of letter replied to

No. 1465

General and Revenue Secretariat
( )
, the *192*

To The Mewz Engr

Date of issue 7-4-25

Signed by M.T.R

Sir,

I am directed to
write re the correspondence ending with
your ch. No. C 1189 dt.
22-23 dt 13-2-24 re
the remedial measures
for the preservation of
buildings in Bala &
Hatibad Temples. I am
~~Draiba~~ and to request that
that enquiries may
be made with the
Mr Archl Surveyor
Mandu

List of enclosures

Copied by

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over

ng + has been
transferred to the Bhadravati
Iron works will be able to
attend to the treatment of
the mines in the manner
proposed by him when he is
employed in the Iron works.
If so he may be asked to
send in an estimate
of the cost of the proposed
work through you.

Please ac

J.W.H.S

Yr Obedt

Copy to the Secy to
Govt of India Dept of Commerce &
Industries
in Mysore.

H C

J.W.H.S

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4/4/25

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1189/M 25
Ex2

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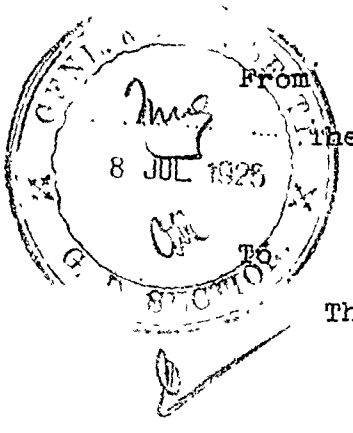
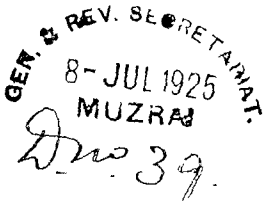
Office of the Muzrai Commissioner in Mysore,

No. Dated, Bangalore the 29th June 1925.



From

The Muzarai Commissioner in Mysore,
Bangalore.



To

The Secretary to the Govt. of H,H, the
Maharaja of Mysore, Revenue Department, Bangalore.

Mug 433-19-34

Sir,

With reference to your letter No. 1465/Muz. 433-19-36 dated 7th April 1925 regarding the remedial measures for the preservation of the images in Belur and Halebid temples, I have the honor to submit herewith for the information of Government copy of letter dated 12th June 1925 together with a copy of its enclosure received from Mr. S. G. Sastry and to state that a further reference in the matter will be made on hearing again from Mr. Sastry.

I have the honor to be,

Sir,

Your most obedient servant,

C.S. Balasundaram

SS. MUZRAI COMMISSIONER.

D.O. dated 12th June 1925 from Mr. S.G. Sastry to the Muzrai Issioner in Mysore.

.....

I enclose herewith an extract from "The Chemical Age of London" dated May 2nd 1925, on "The Kinetics of stone Decay". I shall try to get into communication with Messrs. [illegible] Fox and T.W. Harrison and consult them about our own difficulties. I shall also write to the Building Research Board and place before them our difficulties concerning the Belur and Halebid temples and let you know what they have got to say in the matter. My difficulty has been that the address of the two workers is not available with me and I am writing to London first to obtain this information.

I shall place before these people all the work that has now been done by us and if after the receipt of this information they want to examine the samples of carving that have decayed owing to exposure of ordinary atmospheric conditions, I hope you will be able to issue necessary instructions in the matter and bear all the incidertal expenses."

"C O P Y "

for Muzrai Commissioner.

Extract from "The Chemical Age", May 2, 1925.

The Kinetics of Stone Decay.

In these days, when public attention is directed periodically to the instability of public edificesm there is an inclination to overlook the problem of the decay of stone buildings, which is hardly less serious in some respects than the aspect of structural insecurity. The failure of building stones is due not to one cause but to several. Selection of the proper materials is of vital importance. The use of iron dowels, which rust and expand, splitting the stones, should be discountenanced. Above all, atmospheric influences cannot fail to have an injurious effect. Attempts to mitigate the pollution of the atmosphere are to be commended, because an immeasurable amount of benefit must ... accrue. The combustion of raw fuel, which gives rise to smoke and sulphurous acid, should be forbidden. The severity of our fogs would be reduced, a purer atmosphere ensured, and our building given an added life.

Recent investigation by Messrs. J. & J. Fox and T.W. Harrison show that the decay of stone may occur in three important ways, (1) atmospheric action of a mechanical nature; (2) Chemical action; and (3) the action of living organisms. The agencies operating under the first class are the abrasive action of wind and rain, the ------ splitting effect of frost, and the disintegration consequent on --- fluctuations of temperature. Various forms of chemical action are responsible for serious corrosion. Althogh the stability of the -- structure may not in the main be affected, disappearance of carved work, the flaking of surfaces, and general disfigurement result. Oxygen, carbon dioxide aided by moisture, nitric acid, sulphurous and sulphuric acids all contribute to the promotion of corrosion. It has been found that the action of gaseous oxides of sulpher absorbed by the stone is materially assisted by the , decomposition of soot. Water is, singularly enough, the most potent auxiliary to the other agencies of decay. It absorbs and carries the corrosive constituents of the atmosphere into the stone substance.

Outside urban areas, chiefly, lichens may play some ------ important part in breaking up the surface of the stone, and it is also suggested that nitrifying bacteria may contribute to the disintegration of cement. The subject of bacterial action on stone is now under investigation by the building Research Board. Investigations have

have been directed to the discovery of a mode of treat will protect stone from corrosive usbstances, but so far no succes has attended these efforts. The selection of a universal stone preservative is not an easly matter, and some time will undoubtedly elapse before something really satisfactory is discovered. Meanwhile those who are chiefly concerned with the matter can, with advantage advocate the use of smokeless fuels, confident that the abatement of smoke and the reduction of sulphur impurities which follow cannot fail to have a beneficial influence in the preservation of our public buildings."

"Copy"

for Muzrai Commissioner.

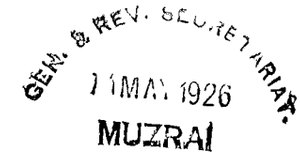
No.C 11890 22-23 Office of the Muzrai Commissioner in Mysore.
and two.

Dated Bangalore, 7th May 1926.

47416

From

C. S. Balasundaram Iyer, Esq., B.A.,
Muzrai Commissioner in Mysore,
Bangalore.



No. 1358

Muz 433-19-38

B. Srinivasa Iyengar, Esq., B.A.,B.L.,
Secretary to the Government of
His Highness the Maharaja of Mysore,
Revenue Department.

Sir,

With reference to correspondence ending with your letter No.1196/M.F.433-19 dated 18th March 1926 regarding the measures to be adopted for the preservation of the images in the Belur and Halebid temples, I have the honor to forward herewith copy of letter No.H.2121/C dated 12th April 1926 from the Director of Industries and Commerce in Mysore, giving enclosure to a -- report submitted by Mr. S.G. Sastry and to recommend that in -- the circumstances explained sanction may be accorded permitting. Mr. Sastry to proceed to Belur and Halebid to select proper -- samples for being sent to the Expert.

The cost of sending these samples as also the travelling allowance of the industrial Chemist may be ordered to be met - from the Interest Earnings of the General Muzrai Fund, as the question of how best to preserve these ancient structures is -- a matter of interest to all Muzrai Institutions.

I have the honor to be,

Sir,

Your most obedient servant,

C S Balasundaramiyer

Muzrai Commissioner.

Letter No.H.2121/C dated 12th April 1926 from the Director of Industries and Commerce in Mysore, to the Muzrai Commissioner in Mysore.

"With reference to your letter No.C.1180 of 23-33 of the 31st ultimo, I have the honor to enclosure herein a copy of the communication addressed to me by Mr. S.G.Sastry, Industrial Chemist in the matter. Mr.S. G. Sastry suggests that he should go to select proper samples from the Belur and Halebeid Temples and the cost of such travelling has to be borne by the Muzrai Department. I am not sure if it would not be possible for the Sub-Divisional Officer or the Amildar to make selections from out of the several pieces which are said to be had in the Halebeid temple. If the proposals of Mr. Sastry are approved, the sanction to incur the expenditure of Rs.250/- will have to be obtained."

"C o p y"

C S Balasundaram

for Muzrai Commissioner.

Letter No.1874 dated 20-3-26 from Mr. S.G.Sastry, Industrial Chemist, Government Soap Factory, to the Director of Industries and Commerce in Mysore, Bangalore.

"I have the honor to enclose herewith in original a letter from Prof.H.Kreuger of the Royal Technical University, Stockholm. The matter refers to the deterioration of the stone images in the temples of Belur and Halebid. I request you to kindly find out from the Muzrai Commissioner if he would permit of some specimens being removed from Belur and Halebid. No figure will, on any account, be dismantled from the temple walls. But there are a number of figures lying about in Belur temple and more so in Halebid and some specimens will have to be ---- selected out of these.

I would also suggest sending some specimens to the Building - Research Board, in London and also to Dr. Alexander Scott, F.R.S., Consulting Chemist to British Museum.

If the above suggestions are approved, I shall go to Belur and Halebid to select proper samples. Further I shall commence corresponding with all the three agencies. There will be no financial -- commitments unless with the sanction of Government.

The cost of sending these samples will have to be debited to the Muzrai Department. My travelling allowance to and from Bangal and these places will have to be met with also by the Muzrai Department. The whole cost may not exceed Rs.250/-. (Even though Prof. Krueger has asked for 3 to 5 lbs. Specimens we may have to send bigger samples and a greater number of samples. These will have to be packed carefully at the Government Soap Factory and then sent through the shipping agents to Sweden and England.)

The Amildar of Belur may also kindly be requested to afford me all the facilities for selection and removal of the samples."

"C o p y"

C S Balasundaram Avl

For Muzrai Commissioner.

Muz: 7]

SUBJECT.....

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Diary No. of letter replied to.....

Muzrai Secretariat

( )

the *192*

SECTION

FILE No. 433-19

SERIAL No. 39

Proceedings of the Government of
His Highness the Maharaja of Mysore

Date of issue .. 28/5/26

Signed by. .....

Read— Correspondence ending with letter No C 1189 of 1922-23 of the 7th May 1926 from the Muzrai Commr in Mysore forwarding Mr. J. Sathya's report regarding the measures to be adopted for the preservation of the murals in the Belur Temples and soliciting sanction to incur an expenditure of Rs 2500 to cover Mr Sathya's T.A. to visit Belur to make arrangements connected with the selection ~~Order Thereon No.~~ and despatch of specimens to the Experts in Europe. the Cost being met from the interest earned of the general Muzrai funds.

Order No. 1517-8 dt 28/5/26 The Muzrai Comr's proposals are sanctioned.

A final report regarding action taken in the matter should be submitted to Govt in due course.

24/5/26

175 To the Muzrai Commr for information

May this be

i Printed?

ii treated as a standing order

iii published in the Gazette. English Part ?

iv translated?

v placed at the disposal of the press ?

vi published in the Gazette, Kannada Part ?

List of enclosures.

Copied by

Examined by

WD 0566—2000—GPB—29-7-22